

LANSCCE and the Cerro Grande Fire	212
"One Hundred" Special Children and One Special Division	212
Need a Science-Fair Judge? Just Call On LANSCCE!	213
Electro-Mechanical Student Training Program Continues to Serve Both LANSCCE and the Local Community	214
Patent Royalties Continue to Support Scholarship Program	214
LANSCCE Equipment (and Our Old Friends, the Shmoos) Find New Homes	216
Just One Thing That's Smart About SMARTS	218
LANSCCE's Award-Winning Users and Staff	218
LANSCCE Employees Earn Distinguished Performance Awards	220
LANSCCE Continues to be a Hot-Spot for Tours	220
Conferences/Workshops	223

### LANSCCE and the Cerro Grande Fire

What started as a prescribed burn on May 4, 2000, at 7:30 p.m., turned into a major forest fire by May 10, requiring the evacuation of both Los Alamos and White Rock (a bedroom community about five miles south-east of Los Alamos). Approximately 110 single and multiple family dwellings were destroyed and about 150 others were damaged. Seven LANSCE employees, or family members, lost their homes to the fire.

Throughout the fire, LANSCE staff and management established a communications center to keep Division employees informed regarding fire containment progress and how it would affect restart operations. Out of space donated by the La Fonda Hotel in Santa Fe, Stan Schriber, Lorraine Stanford, Marilyn Thomas (LANSCE-DO), and Chris Webster (LANSCE-9) did their best to contact all Division members, which was no easy task considering that many of the employees were displaced from their homes due to the evacuation.

Data from LANSCE Group Leaders (who assisted with activities at the communication center), Thomas, and the web page (set up by the local radio station KRSN for displaced persons to record their temporary whereabouts) provided the necessary contact information. Roger Pynn and Geoff Greene (LANSCE-DO) attended the Laboratory's management meetings during this period and provided information to the team working twelve-hour days at the temporary communications center in Santa Fe. This temporary office also assisted the Accelerator Production of Tritium, Spallation Neutron Source, and other projects with personnel working at TA-53, as well as responding to requests from the LANL Emergency Operations Center. Earl Hoffman (LANSCE-DO) assisted the Santa Fe office for several days even though his house was completely destroyed by the fire just a few days prior.

Fortunately, Jim Fraser (LANSCE Facility Manager at the time of the fire) was able to make special temporary access arrangements for computer support personnel to enter LANSCE to restart computer servers, thus enabling access for the communications center team to retrieve some of the needed data to make employee contacts. Fraser and his Facility Management team did an outstanding job working with the LANL Emergency Operations Center and doing their best to minimize any possible consequences from the fire to the LANSCE site.

Additionally, many employees volunteered to help out in various ways. Ginger Grant (LANSCE-DO) provided administrative assistance to the LANL Emergency



← The only fire damage at LANSCE was to its technical area sign opposite the entrance on Jemez Road. Smoke from the fire reached TA-53, but did not cause any damage to facilities.



↑ Division Office employees collected household goods, based on needs lists provided by victims of the fire, for distribution to LANSCE employees or their families who lost their homes and personal belongings in the fire.

Operations Center from May 11-19. Other employees volunteered after the fire in reseeding efforts and erosion control, and they generously contributed to a collection effort for household goods for those who lost their homes and most of their personal belongings in the fire.

LANSCE began a safe and efficient restart of the facility on May 22, 2000, twelve days after the evacuation of Los Alamos.

### "One Hundred" Special Children and One Special Division

During both 1999 and 2000, LANSCE Division employees helped make Christmas just a little bit brighter for over 300 children in northern New Mexico. Originally titled 100 Special Children, this effort, spearheaded primarily by Ginger Grant, LANSCE Executive Administrator, provided toys, clothes, and shoes for 156 children in 1999 and 119 during the 2000 drive. Grant started the effort based on her belief that "every child deserves to have something new at Christmas." The effort became so popular that Grant began receiving calls from employees from Johnson Controls Northern New Mexico (a

major LANL contractor) and other LANL division employees asking if they could contribute via the LANSCE drive.

After consulting with local agencies to determine needs and a distribution mechanism, Grant set up a database with the names, ages, sizes, and wish lists for the children. LANSCE Division employees could then decide what they wanted to purchase. Grant established this system so that every one who wanted to could contribute something, even if an individual could only afford one item from the child's list. The child's name stayed on the list until all the items had been donated. According to Grant, several employees picked a child the same age as their own and then had their child help choose the gifts. Every child received clothes, shoes, and a toy. For the children in foster care, toys were collected at LANSCE and delivered to a Christmas party being held for them by New Mexico Social Services. The rest of the children are sponsored by other agencies in Northern New Mexico. The children's ages ranged from 1 month to 17 years.

As each child was picked, an ornament with the child's name was placed on the tree in the LANSCE Visitor Center (designed and created by LANSCE-4's artist, Garth Tiejten). Because of the generous response by so many LANSCE employees, the tree quickly filled up with ornaments—and several Division Office employees' offices and the hallways were filled with gifts.

The items, including three full-size bicycles, were brought to the Division Office. For about three weeks, a then-vacant Deputy Division Director's office was temporarily turned into Santa's workshop. LANSCE administrative and financial staff, including Anne Donohoe, Ginger Grant, Mary-Beth Inglis, Ruth Ann Neal, Miquela Sanchez, Kristine Smith, Lynn Varos, and Pam Vigil, wrapped the gifts in time for delivery. Other "elves" that helped Grant during the 1999 and 2000 drives included former LANSCE employees Stacy Gregory, June Fielder, Alma Sondreal, and Jamie Kephart.

The Christmas drive has been such a success that Grant hopes to continue it for as long as possible and to contact additional agencies throughout northern New Mexico to be sure it reaches as many children as possible.

*"Christmas is my favorite time of the year; it's a magical time and it brings out the best in people. I am so proud to work in [LANSCE] Division with people who have such big hearts. Though we don't get to see the children open their gifts, we can just imagine how excited they are, we can imagine the light in their eyes and the smile on their face and that makes us smile."*

—Ginger Grant



↑ Gifts wrapped and ready for delivery to the 32 children in foster care!



↑ Each ornament on the tree represents a gift going out to a special child.

## Need a Science-Fair Judge? Just Call On LANSCE!

Elementary school science fairs have come a long way since the 1970s when you could always look forward to at least one "exploding" baking soda volcano and a



"rubber" egg smelling of vinegar. This new breed of youth science experiments requires some high-tech judges. Where else should one go for such a judge but a Division with a wide breadth of scientific and technical expertise?

Gloria Bennett, LANSCE-2, and Rozelle Wright, LANSCE-8, covered the 1999 Larragoite Elementary School Science Fair, and Rich LaFave, Paul Leslie, Walter Lysenko, and Robert Valdiviez, LANSCE-1, covered the 2000 event. Larragoite is in the Santa Fe School District. Paul Leslie also participated in the 1999 Inter-Tribal Science Bowl at the U.S. Air Force Academy, and in addition to the Larragoite fair, Robert Valdiviez took personal time to assist with the New Mexico Native American Science and Engineering Fair in Albuquerque in March 2000.

It also helps that LANSCE personnel are willing to take the time out of their busy schedules to spend time at the schools in these worthy endeavors. Maybe there was even some **VERY** early recruiting going on . . . ?

### Electro-Mechanical Student Training Program Continues to Serve Both LANSCE and the Local Community

Seven more students graduated from the University of New Mexico, Los Alamos (UNM-LA), with certificates or degrees in electromechanical technology, thanks to an educational outreach program jointly developed by LANSCE and UNM-LA. The Electro-Mechanical Technology Student Training Program, now in its fourth year, is a two-year certificate program designed to help students receive valuable academic and on-the-job training in the field. The program promotes and provides access to opportunities in higher education for those entering the workforce for the first time or workers in need of retraining. Under the program, students spend half their time studying at UNM-LA and the other half working under the guidance of mentors at the Laboratory.

The 2000 graduates include Janet Lovato, John Harrison, and Matthew Lusk of LANSCE; Melissa Reed, Edward Jacquez, and David Reass of the Dynamic Experimentation (DX) Division; and Dolores Salazar of the Physics (P) Division. In 1999, 14 students completed the program, including Andrew Espinoza, Aaron Archuleta, Brandon Roller, J. Pat Quintana, Joe Strothman, and Russell Knapp of LANSCE; Matthew Foley and Adam Kuiper of Engineering Sciences and Applications (ESA) Division; Eric Baca of Chemistry (C) Division; Anna Flores of Nuclear Materials Technology (NMT) Division; Benny Montoya of P Division; and Casey Keith, John Valdez, and Shane Perkins of DX Division.

Marilyn Thomas, former LANSCE Division Human Resources representative, and the former Accelerator Operations Technology Division Diversity Committee began working on the Electro-Mechanical Technology Student Training Program in 1995. The committee worked with UNM-LA staff and faculty to develop the curriculum, and Los Alamos' Human Resources Division helped coordinate the hiring process. The program was first offered in January 1997. Since that time, 37 students have participated in the program. At the completion of the year 2000 program, 21 students have graduated, and 19 of them now work at Los Alamos. Nine students currently take part in the program.

### Patent Royalties Continue to Support Scholarship Program

Created in 1998, the LANSCE Student Education Scholarship Program awarded 29 scholarships in 1999 and 19 undergraduate awards in 2000. The program is part of the Division's effort to help outstanding students pay for their education and encourage them to consider permanent employment at LANL after graduation. Scholarships ranged from \$200 to \$1000 per student and were funded from patent royalties derived annually from LANSCE-developed technologies. Managers from each LANSCE group nominated students based on criteria that included overall performance, contributions to their respective groups, and academic promise.

In 1999, 23 of the 29 students attended New Mexico universities and junior colleges. For 2000, New Mexico students made up 16 of the 19 awards for that year. In the three years since the program began, LANSCE has awarded more than \$47,000 in scholarships to 67 undergraduate students.



↑ Mike Trujillo and Roger Pynn present a LANSCE Student Education Scholarship Program award to Felicia Chacon, a student at New Mexico State University.

**1999 LANSCE Scholarship Recipients**

<b>Student</b>	<b>Institution</b>	<b>Major at Time of Award</b>
Antonio Alberto	Northern New Mexico Community College	Mechanical Engineering
Crystal Archuleta	Northern New Mexico Community College	Education
Anthony Baros	University of New Mexico	Electrical Engineering
Heather Borchert	North Dakota State University	Electrical Engineering
Felicia Chacon	New Mexico State University	Undeclared
Carlos Cisneros	Northern New Mexico Community College	Microelectronics
Ethan Duni	University of California at San Diego	Electrical Engineering
William Emigh	North Carolina State University	Computer Science
Everett Espinoza	University of New Mexico	Electrical Engineering
Anita Jaramillo	Northern New Mexico Community College	Computer Science
Janet Lovato	University of New Mexico	Electrical-Mechanical Engineering
Matthew Lusk	University of New Mexico	Electrical-Mechanical Engineering
Erin Maes	New Mexico State University	Elementary Education
Georgette Maestas	Northern New Mexico Community College	Accounting
Carlos Manzanares	New Mexico State University	Mechanical Engineering
Adrian Martinez	New Mexico State University	Wildlife Science
Gene Martinez	New Mexico Highlands University	Engineering
Elizabeth Meyer	University of New Mexico	Electrical Engineering
Ernestine Naranjo	University of New Mexico	Computer Engineering
Eric Olivas	University of New Mexico	Mechanical Engineering
Stephanie Radzinski	Texas Technical University	Accounting
Daniel Riley	University of New Mexico	Computer Engineering
James Romero	Northern New Mexico Community College	Welding
Marvin Roybal	Northern New Mexico Community College	Computer Electronics Engineering
Eric Salgado	University of California at San Diego	Electrical Engineering
Sal Sena	New Mexico State University	Mechanical Engineering
Everly Silva	University of Colorado	Electrical Engineering
Richard Stein	New Mexico State University	Computer Engineering
Lynnette Trujillo	University of New Mexico	Undeclared

**2000 LANSCE Scholarship Recipients**

<b>Student</b>	<b>Institution</b>	<b>Major at Time of Award</b>
Alonzo Archuleta	University of New Mexico	Mechanical Engineering
Crystal Archuleta	Northern New Mexico Community College	Education
Kimberley Calabaza-Jenkins	University of New Mexico	Biology
Tracy Gurule	Northern New Mexico Community College	Radiology
Erin Maes	New Mexico State University	Business Administration
Nyree Maes	New Mexico State University	Computer Science
Audrey Martinez	Fort Lewis College	Undeclared
Greg Natoni	New Mexico State University	Mechanical Engineering
Eric Olivas	University of New Mexico	Mechanical Engineering
Daniel Riley	University of New Mexico	Computer Engineering
James Romero	Northern New Mexico Community College	Welding
Randy Romero	New Mexico State University	Electrical Engineering
Christopher Roybal	University of New Mexico	Business Administration
Therisa Salazar	New Mexico State University	Photography
James Schaefer	University of New Mexico	Computer Science
Michael Serrano	New Mexico Institute of Mining and Technology	Electrical Engineering
Adiel Smith	Massachusetts Institute of Technology	Mechanical Engineering
Domenic Strano	Slippery Rock University	Computer Science
Lynnette Trujillo	University of New Mexico	Undeclared

### LANSCCE Equipment (and Our Old Friends, the Shmoos) Find New Homes

Higher-education institutions in New Mexico and around the country are beneficiaries of Laboratory equipment since the Laboratory Education Equipment Gift program officially began Spring 2000. Under this program, LANSCE-1 donated a Hewlett-Packard electrostatic plotter to Northern New Mexico Community College (NNMCC) for use by the drafting instructional program, and a large capacity Ozalid blue-line machine went to the construction department at the El Rito campus of NNMCC. The equipment was delivered and set up by LANSCE-1 personnel Bruce Baillie, Felix Martinez, Dennis Montoya, Angela Naranjo, Armando Rendon, and Raymond Roybal. Of the roughly 35 pieces of equipment donated, 15 have gone to New Mexico institutions, including NNMCC, New Mexico State University, University of New Mexico, Los Alamos, and New Mexico Institute of Mining and Technology.

Affectionately called Shmoos due to their resemblance to the lovable little creatures from the comic strip "Li'l Abner," about 240 of these gamma-ray detectors were placed in various locations at LANSCE looking for evidence of gamma-ray emissions from cosmic sources at high energies. The Shmoos were just sitting around the roadways and hillsides throughout TA-53 collecting cosmic dust since the 10-year project ended in 1995. The Laboratory and the California Institute of Technology reached an agreement in which the institute will retrieve and truck the Shmoos back to California for cosmic-ray research there. During June and July 2000, 150 cosmic-ray detectors were removed and given a new mission in a new state.

About 40 Shmoos were located around an Anasazi Indian ruins site, so great care was taken not to disturb any of the remaining artifacts during removal. In addition to the Shmoos, approximately 20 miles of piping and cabling that connected them to the nearby data-collection system was removed. The first truckload of Shmoos left LANSCE on July 6, 2000.

Excess equipment, as defined under federal guidelines, is eligible for "gifting" to educational institutions in New Mexico and elsewhere under the new program. This equipment includes photographic and communication equipment, measuring tools, and special industrial and metal-working machinery. In addition, since 1994, a program has allowed the Laboratory to donate excess computers and accessories to kindergartens through high schools.



↑ One of 240 gamma-ray detectors ("Shmoos") is removed as part of the decommissioning of a project that looked for evidence of gamma-ray emissions from cosmic sources at high energies. They have found a new home at the California Institute of Technology for cosmic-ray research out there.



↑ Ray Roybal, right, of Accelerator Physics and Engineering (LANSCE-1) gives Jeff Toomey of Northern New Mexico Community College a quick lesson on how to operate the electronic plotter. Photo courtesy of Property Management (BUS-6).

A large number of legacy items were removed or recycled around the entire LANSCE facility in an effort to clean-up the area and improve the safety and aesthetics of the site.





↑ Equipment from long-finished experiments,



↑ eleven uninhabitable buildings totaling over 13,000 square feet,



↑ 26,000 pounds of used oil were sent for recycling, and



↑ several obsolete transformers were removed.



The before and after photos tell the story better than words.

### Just One Thing That's Smart About SMARTS

SMARTS, the Spectrometer for Materials Research at Temperature and Stress, a new neutron powder diffractometer under construction at the Lujan Center has more than its technical capabilities to brag about. What's "smart" about SMARTS is the fact that the instrument's beam-line shielding was built with recycled steel plates from the decommissioned Bevatron accelerator at Lawrence Berkeley National Laboratory (LBNL). Technicians from LBNL took apart the laminated steel plates that made up the central yoke of the accelerator and custom cut and assembled them to match the design specifications of the hundreds of steel blocks surrounding the SMARTS beam line.

The LANSCE SPSS Enhancement project was only charged for the shipping cost required to transport the 300 tons of steel plates to Los Alamos. This recycling effort represents a \$250,000 savings to the SPSS project, based on the cost of commercial steel, and it represents an additional savings of nearly \$1,000,000 to LBNL based on what it would have cost to recycle the steel commercially.

SMARTS will be used for strain measurements and engineering studies and has an extensive capability to make *in situ* measurements on materials in a wide range of sample environments. For more information on the SMARTS instrument and its capabilities, see the related story on page 156.



↑ View inside the SMARTS furnace.

### LANSCE's Award-Winning Users and Staff

Many users and staff at LANSCE have much to be commended about—and many were formally recognized the past couple of years by external organizations for their outstanding contributions to the scientific community.

Dr. Sven Vogel, who worked as a GRA at the Lujan Center and is currently with the Laboratory's Materials Science and Technology Division, was presented the prestigious **Jerome B. Cohen Award** in 2000. Dr. Vogel received the award for his work in developing a software application that analyzes neutron-transmission data—Bragg-Edge Transmission Measurement Analysis (BETMAN). BETMAN incorporates real-time measurements from neutron-transmission experiments to study, for example, the kinetics of structural phase transitions in solids. This technique provides the opportunity to study hardening, tempering, and aging heat treatments of structural materials. Vogel's work was performed on Flight Path 5 at the Lujan Center. As a result of Dr. Vogel's analysis method, transformation kinetics can now be measured an order of magnitude faster than on the Lujan Center's high-intensity powder diffractometer. This award was established in the name of Professor Jerome B. Cohen, one of the leaders in the field of x-ray analysis, and in the training of students in this art. The award is intended to recognize the outstanding achievements of student research in this field.

Dr. Margarita Russina was awarded the **Hahn-Meitner-Institut Ph.D. Prize**, December 1, 1999, for the best popular presentation of the scientific results. The precondition for the prize nomination was the excellence of the Ph.D. thesis. The 18 nominations were examined by a Selection Committee, which consisted of experts representing science and scientific journalism. In her thesis, Dr. Russina studied microscopic relaxation processes around the liquids-glass transformation. She was able to explain for the first time the nature of the so-called b-process, appearing around glass transition, and found evidence for correlated collective motion of the atomic groups highly viscous supercooled liquids. The study of this phenomenon, i.e., the spontaneous occurrence of dynamic heterogeneity in structurally homogenous materials, plays an important role in other fields of condensed physics. Dr. Russina performed her Ph.D. research using neutron scattering at the Hahn-Meitner-Institut under supervision of Dr. Ferenc Mezei (LANSCE) and obtained her Ph.D. degree at Technical University in Berlin. She is currently working at the Lujan Center on a new spectrometer project, IN500. For more information on IN500, see related story on page 172.

The **Second European Conference on Neutron Scattering** (ECNS '99) in Budapest, Hungary, September 1-4, 1999, attracted about 700 participants from Europe and the rest of the world. To recognize and stimulate the efforts of young scientists, the best conference presentations were honored by the **Young Scientist Awards**. Dr. Margarita Russina was among 10 young scientists selected to receive this award.



Dr. Russina's research involved the observation of collective, heterogeneous flow phenomena in the disordered matter.

**Dr. Ferenc Mezei**, LANSCE-DO, was honored by both the European Neutron Scattering Association (ENSA) and the Hungarian Academy of Sciences during 1999. The **Walter Hålg Prize** of the ENSA was first awarded in 1999, with Dr. Mezei as the first recipient. This prize is awarded biannually to a European scientist for outstanding, coherent work in neutron scattering with long-term impact on scientific and/or technical neutron-scattering applications. After reviewing a large number of nominations, the Selection Committee awarded the prize to Dr. Mezei in recognition of his innovative and outstanding contributions to the science of neutron scattering over the past three decades. His conception, development, construction, and application of neutron-spin-echo techniques opened a hitherto unobtainable energy and time domain for the study of structural and magnetic relaxation processes. Dr. Mezei also introduced entirely novel concepts in instrumentation.

**Dr. Mezei** was again honored when the inaugural **Jenő (Eugene) P. Wigner Prize** was awarded to him by the Hungarian Academy of Sciences. This award recognizes the most outstanding contributions related to nuclear physics by scientists native to Hungary to commemorate the Hungarian born U.S. Nobel Laureate Wigner. Dr. Mezei was honored for his seminal contributions to the progress of neutron-scattering science, in particular for the discovery of neutron-spin-echo spectroscopy in 1972.

**Professor Heinz Nakotte** was awarded a five-year grant through the **National Science Foundation's Early Career Development** program, which supports outstanding young faculty members who combine teaching and research. The highly competitive career program emphasizes early development of academic careers where research is enhanced by inspired teaching and enthusiastic learning. This funding will help Nakotte pursue his investigation of materials that exhibit non-collinear magnetism. The results of his research could have important applications in computer science, medicine, and other fields. This NSF funding also will foster efforts to develop a strong materials science program at New Mexico State University (NMSU)—a fast-growing field with promising career opportunities. Professor Nakotte is developing new undergraduate and graduate-level courses in materials science, appealing mainly to physics and engineering students, and has already taught some of these new courses, such as "Introduction to Modern Materials."

According to Professor Nakotte, "The idea is to try to close the gap between fundamental science and its applications. My research is very focused, but the teaching part is very broad in materials science."

Professor Nakotte spends half his time at Los Alamos, and, since 1997, he has spent the other half at NMSU as a faculty member in the physics department.

The LANSCE-4 Communications Team won **three awards from the Phoenix Chapter of the Society for Technical Communication (STC)**. The honors were given for online communications, technical publications, and technical art. Communications Team members receiving the award were **AnnMarie Dyson, Sue Harper, Grace Hollen, Barbara Maes, and Garth Tietjen**. The STC is a professional organization dedicated to advancing the art and science of technical communication. Each year the organization sponsors an international technical publications competition to recognize and encourage excellence in communication through printed media. The LANSCE team members were awarded the two highest levels of distinction for their entries:

- ***Award of Distinguished Technical Communication—Online Communications***  
LANSCE Achievements interactive tour link (technical marketing)—Grace Hollen and Garth Tietjen
- ***Award of Excellence—Technical Publications***  
LANSCE Division Technology/Research Reviews (technical reports)—Grace Hollen, Garth Tietjen, Barbara Maes, AnnMarie Dyson, and Sue Harper
- ***Award of Excellence—Technical Art***  
LANSCE Division Technology/Research Reviews (interpretative illustration)—Garth Tietjen and Grace Hollen

At the time of printing of the 1995-1998 LANSCE Activity Report, the recipients of the **1998 Presidential Early Career Award for Scientists and Engineers** had not been announced. Long-time LANSCE user and User Group Executive Committee member, **Dr. Tonya Kuhl**, was selected for this award. Dr. Kuhl's name was put forward by the DOE Office of Defense Programs (DP), following her nomination by LANSCE for a DP Early Career Award. She was nominated for the development of a confined-geometry shear cell that allows for the study of the structure of fluid molecules captured between aligned solid surfaces, an application that provides considerable benefit to the DP mission in the study of complex materials. Dr. Kuhl is currently at the University of California at Davis where she is an Assistant Professor.

### LANSCCE Employees Earn Distinguished Performance Awards

Los Alamos National Laboratory presents Distinguished Performance Awards annually to a few individuals who have made an outstanding and unique contribution that had a very positive impact on the Laboratory's programmatic efforts or status in the scientific community, required unusual creativity or dedication of the individual, and resulted from a level of performance substantially beyond what normally would be expected. Three LANSCCE employees met all these criteria and were presented with this special award.

Dr. Robert Von Dreele, a crystallographer at the Lujan Center, is the recipient of a 1999 Distinguished Performance Award. Von Dreele won this award for his development and application of data-refinement techniques for structure determination of proteins in polycrystalline form, which represents a major new paradigm for understanding biological molecular crystalline structures.



↑ Robert Von Dreele, Lujan Center.

Dr. Von Dreele's work shatters the hitherto accepted textbook dogma that structure determination of molecules with hundreds (or thousands!!) of atoms could only be accomplished with sufficiently large, single crystals and opens up new avenues in materials science and structural biology. As

Anthony Cheetham, Director of the Materials Research Laboratory at the University of California at Santa Barbara, stated in a letter in support of Dr. Von Dreele's nomination, "I firmly believe that this is a major breakthrough in the field and that [Von Dreele's] work in this area will be seen as an important milestone."

Sandy Booth (formerly Kelley), a computer information system specialist in the User Office, is the recipient of a 2000 Distinguished Performance Award. She won the award for her work as the conference coordinator of the Tenth International Symposium on Capture



↑ Sandy Booth, User Office.

Gamma-Ray Spectroscopy and Related Topics, part of a series of conferences that are held approximately every three years. They are prestigious conferences with stiff competition for the honor of hosting the event. The entire job of organizing the event fell to

Sandy. Until this time she had never organized a conference or even coordinated such an event. But when assigned the job, Sandy immediately took control and willingly tackled the enormous amount of work, in addition to fulfilling her role as the LANSCCE Visitor Center Administrator. The conference was a great success, and it significantly enhanced the presence, stature, and prestige of Los Alamos National Laboratory and LANSCCE Division in the international scientific community. Following the conference, Dr. Richard Casten, one of the keynote speakers and the director of the Wright Nuclear Structure Laboratory at Yale University, wrote that this conference "...was the best of the entire series. By doing an excellent and outstanding job of organizing the conference and through her dedication, ability, and enthusiasm, Sandy made a significant contribution to the success of the conference."

When the Accelerator Production of Tritium (APT) experimental irradiation project needed two new cooling water systems, Peter Danny Olivas of High Intensity Beam Lines, Accelerator Experimental Areas and Remote Handling, volunteered to design the control system. Despite the group's concerns about Programmable Logic Controller (PLC) language reliability, Olivas believed



↑ Peter Danny Olivas, LANSCCE-7

that only the flexibility of the PLC language would allow him to meet the schedule and satisfy final requirements. Olivas convinced his group to allow him to proceed and then independently forged ahead with structuring the system, learning

to use and then demonstrate it, proposing an operational plan, and specifying the remotely actuated valves and other hardware he would be controlling in the radioactive area. He delivered a control and interlock system that was essentially flawless and performed remarkably well. The flexibility he built into the system proved critical to APT success because requirements changed as operations evolved. Olivas's work marks a new chapter in the control and safety of proton beams in addition to earning him a 1999 Distinguished Performance Award.

### LANSCCE Continues to be a Hot-Spot for Tours

The tour program at LANSCCE continues to grow as more academic institutions and community groups request a look at what goes on at the Mesa. The facility hosted over 350 students touring the facility in 1999-2000

alone. In addition, LANSCE has assisted several groups coming to the Laboratory that wish to get a glimpse of other activities at Los Alamos. Using a cadre of "volunteers," LANSCE is able to coordinate custom tailored tours to help increase awareness of LANSCE capabilities and educational opportunities in the fields of neutron scattering, materials science, nuclear physics, proton radiography, and accelerator science and technology. All these tours are in addition to the usual "programmatic" tours, which are aimed at visiting dignitaries, sponsors, or project reviews. Following are details of just a few of the groups hosted during the past two years.

In December 2000, Professors Shenda Baker and Adam Johnson, Harvey Mudd College, and five of their undergraduate students visited LANSCE. Professors Baker and Johnson, believing that undergraduate students have limited understanding of the science and engineering that is conducted inside our national laboratories, wanted to give their students the opportunity to talk to people doing science at a national laboratory and understand what it means to be a scientist at such a facility. Professor Baker was able to obtain a NSF grant to fund the visit. The intent of the trip was two-fold: first, to expose motivated students to the history of science at the Laboratory so they can better understand the role of our current national laboratories and second, to let them interact with scientists and engineers who have chosen science at the Laboratory as a career.



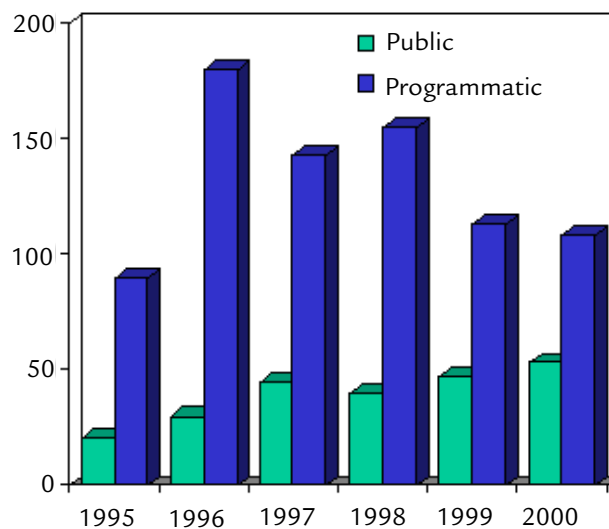
*"I love to give tours for the scouts because I see in them the future of science. I want them to get excited about all we have learned here at LANSCE and all that we can still learn . . . I think that if I can get enough people excited about the possibilities of this facility, we will one day put power back on the grid while we are decreasing the number of atomic bombs in the world."*

—Keith Stephens



↑ Jim Amann of Subatomic Physics (P-25), in the striped shirt at left, explains the workings of the proton accelerator at LANSCE to a group of students and professors from Harvey Mudd College. The undergraduate students have shown interest and promise in pursuing chemistry and materials science studies in graduate school and toured areas of the Laboratory thanks to the help of a grant from the NSF. In addition to LANSCE, the group toured the Blue Mountain computing facility. Shown clockwise from Amann's right are Loren Perelman, Eric Toberer, Adam Johns, Professor Adam Johnson, Amanda Brooks, Jennifer Godwin, and Professor Shenda Baker, a former postdoc at LANSCE, member of the LANSCE External Review Committee, and vice chair elect of the LANSCE User Group Executive Committee. Photo by James E. Rickman.

Sponsored by the DOE Los Alamos Area Office, 150 boy and girl scouts from Amarillo, Texas, again toured LANSCE and the LANL Science Museum as part of their Atomic Energy Merit Badge studies. Tour guides Matthew Murray (P-25), Dave Bell, Chuck Burns, Janet Lovato, Mark McMillen, Shane Passmore, and Keith Stephens (LANSCE-6) continued their support of these tours, which date back more than 25 years. The younger boys were most fascinated by the dead flies in



↑ Although the number of programmatic tours has decreased slightly, more public tours have been arranged and conducted. Public tours include schools, the media, and other groups.



## News and Events

the windowsill of Los Alamos' "largest bug-wacker," the 750,000 volt, three-story-high injector power supply. Routine science is interesting, but blowing things up in the Line C dome can capture the imagination. For a homework assignment, the scouts were to measure the inside of their home microwave oven and compare the dimensions to the wavelength of the power tube from the nameplate information. A final thought was to decide how they will manage their nation's nuclear stockpile in 20 years.

During a January 2000 visit to the Laboratory, Senator Pete Domenici was given a briefing on the proton radiography work currently under way at LANSCE and a tour of this unique facility in Area C.

Senator Domenici noted in a colloquium at the Laboratory that Los Alamos "... demonstrated that proton radiography can be an important new stockpile stewardship tool when [we] used it to produce the first motion picture of an implosion." For more information on proton radiography, see Page 138.

Tours conducted in 1999 and 2000 also included a regular visit from student groups from the University of New Mexico Research Experience for Undergraduates, a class of fourth graders from a Santa Fe elementary school, and several for the Federal Emergency Management Agency (FEMA) personnel the year of the Cerro Grande fire.

## Conferences/Workshops

## Lujan Seminar Series (2000)

4-Jan	Data Acquisition at WNR	W. Abfalterer	LANL/LANSCE-3
11-Jan	Programming Paradigms and Languages	J. O'Donnell	LANL/P-23
13-Jan	SQUIDs: Weapons, Neutrons and Brains	M. Espy	LANL/P-21
14-Jan	UBe <sub>13</sub> : Selected Histories and Recent Results	G. M. Schmiedeshoff	Department of Physics, Occidental College LANL/LANSCE-12
21-Jan	Phonons as a Probe of Charge Inhomogeneity in High-Temperature Superconductors	R. McQueeney	LANL/LANSCE-12
31-Jan	NMR Studies of Inhomogeneous Low Frequency Spin Fluctuations in La <sub>1.8-x</sub> Eu <sub>0.2</sub> Sr <sub>x</sub> CuO <sub>4</sub> from x=1/8	N. Curro	LANL/MST-10
24-Feb	Materials Science and Technology Postdoctoral Colloquium	B. Clausen and H. Choo	LANL/LANSCE-12
3-Mar	The Study of Electrical and Optical Properties of Ferrocene-Based Polymers and their Applications in Optical Fiber Devices	L. I. Espada	Raytheon Missile Systems
6-Mar	Current Density and "Magnetization Density" in Atoms	P. F. de Chatel	New Mexico State University and University of Amsterdam
9-Mar	Vibrational Spectroscopy with Neutrons: Comparison of Experiment with Ab Initio Calculations	B. Hudson	University of Syracuse
1-May	Vertex, Pharos and Helios: What Do They Have in Common?	F. Trouw	LANL/LANSCE-12
27-Jul	Gas Scintillation Beam Profile Monitor and Cross Section Measurements at the CERN PS and Booster	M. Plum	LANL/LANSCE-2
11-Dec	Atomic Correlations and the Complete Local Structure of Semiconductor Alloys In <sub>1-x</sub> Ga <sub>x</sub> As	L. K. Jeong	Michigan State University
18-Dec	Magnetization Reversal in Exchange Bias Systems: New Insights with Polarized Neutron Reflectometry	A. Hoffman	LANL/LANSCE-12

## Other LANSCE Seminars (2000)

7-Mar	Mathematica Seminar	R. Knapp	LANL
13-Apr	Symmetry-Breaking Perturbations of Polymer Blend Phase Separation	J. F. Douglas	NIST
20-Apr	The Dynamics of Block Copolymer Nanostructures	J. Kornfield	California Institute of Technology
27-Apr	Synchrotron Radiation Studies of Soft Condensed Matter Films	S. K. Sinha	Argonne National Laboratory
31-May	A Search for Time Reversal Violation in Muon Decay	N. Danneberg	ETH/PSI Zurich
1-Jun	The Ultra-Cold Neutron Program at PSI/Measurement of the Neutron EDM	M. Daum	ETH/PSI Zurich
12-Jun	High-Current Cyclotron Approaches at the Yerevan Physical Institute	Z. Guirragosian	Yerevan Physical Institute
19-Jun	Neutron Spin-echo at Spallation Source Correlations	F. Mezei	LANL
17-Jul	Spin Freezing and Long-Range Magnetic CePtSn and CeCuSn	H. Nakotte	New Mexico State University
14-Aug	Large-Scales Simulation of Beam Dynamics and Halo Formation in High-Intensity Linacs	J. Qiang	LANL
6-Sep	UCN Workshop	T. Bowles	LANL
14-Sep	High Energy Accelerator Research	T. Tajima	LANL
21-Sep	Spallation Source Shielding Modeling Monte Carlo Calculations	I. Koprevnikar, T. Graz	
2-Oct	A Shared Reflectometry Beamline at the Spallation Neutron Source	F. Klose and J.F. Ankner	Argonne National Laboratory
23-Oct	Glass Transition: Old Question and New Findings	M. Russina	LANL
4-Dec	Development of Ion Sources and Beams for the Fusion Program	J. Kim	

